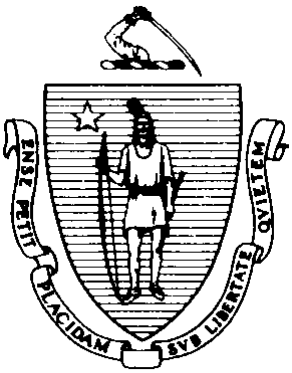

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Prevention and Control of Healthcare-Associated Infections In Massachusetts

Executive Summary: Part 1

convened by the Betsy Lehman Center for Patient Safety and Medical Error Reduction

and

JSI Research and Training Institute, Inc.

in Collaboration with

the Massachusetts Department of Public Health

January 31, 2008

EXECUTIVE SUMMARY

Healthcare associated infections (HAIs) are a major public health concern throughout the nation, contributing to increased morbidity, mortality, and cost. In an effort to raise awareness, promote transparency for healthcare consumers and motivate hospitals to prioritize infection prevention, several states now require reporting of selected HAIs to their health authorities and some make this information available to the public. The recent healthcare reform law (Chapter 58 of the Acts of 2006, Section 2) directed the Massachusetts Department of Public Health (DPH) Division of Health Care Quality to develop a Statewide Infection Prevention and Control Program. The Betsy Lehman Center for Patient Safety and Medical Error Reduction convened a panel of experts and key stakeholders to make recommendations for a statewide infection prevention and control program, including potential reporting of HAI measures by hospitals. With the assistance of JSI Research and Training Institute, six Task Groups and an ad hoc subcommittee, involving additional local and national experts, reviewed available evidence and developed specific proposals for prevention and reporting. The Expert Panel then decided which should be accepted and determined the strength of the recommendation.

As of January 31, 2008, the Expert Panel has completed its work and endorsed a comprehensive set of recommendations encompassing HAI reporting and "best practices" for preventing HAIs, including programmatic aspects of hospital infection prevention and control programs. This summary provides highlights of the panel's recommendations; technical specifications of these recommendations and a full description of the process by which they were developed can be found in Part 1 of the full report --- ***Prevention and Control of Healthcare Associated Infection in Massachusetts, Part 1: Final Recommendations of the Expert Panel****, January 31, 2008.*

I. RECOMMENDATIONS REGARDING PREVENTION OF HEALTHCARE-ASSOCIATED INFECTIONS

Strategies to reduce or eliminate the risk of HAIs are a crucial component of a comprehensive infection prevention and control program. While numerous national standards exist, many have not been updated for several years and often there are inconsistencies between related guidelines. To establish an evidence-based set of "best practices" for use by Massachusetts hospitals, the Task Groups and Expert Panel conducted a detailed review of currently available standards and endorsed guidelines in nine areas:

1. Infection Prevention and Control Programs in Hospital Settings

2. Hand Hygiene Recommendations
3. Standard Precautions for the Prevention of HAIs
4. Contact Precautions for the Prevention of HAIs
5. Environmental Measures for the Prevention and Management of Multi-drug Resistant Organisms
6. Prevention of Ventilator Associated Pneumonia
7. Prevention of Surgical Site Infections
8. Prevention of Bloodstream Infections
9. Prevention of Cather-associated Urinary Tract Infections

The sources used for these updated guidelines included three pivotal CDC standards --- *Guideline for Isolation Precautions* (2007), *Guideline for the Prevention of Intravascular Catheter-related Infections* (2002), and *Guideline for the prevention of surgical site infection* (1999). In addition, the HICPAC/SHEA/APIC/IDSA Hand Hygiene Task Force *Guideline for hand hygiene in healthcare settings* (2002), HICPAC *Management of Multidrug-Resistant Organisms in Healthcare settings* (2006), American Thoracic Society *Guidelines for the Management of Adults with Hospital-acquired, Ventilator-associated, and Healthcare-associated Pneumonia* (2005), and IDSA/SHEA *Prevention of Catheter-associated Urinary Tract Infections in Acute Care Hospitals* (in press 2008) were used.

II. RECOMMENDATIONS RELATED TO REPORTING OF HEALTHCARE-ASSOCIATED INFECTION MEASURES

A. General Principles

Establishment of a meaningful and valid HAI reporting system should be guided by several important criteria related to the reporting system, the hospitals' response and the measures themselves:

1. The measures used for reporting of specific healthcare associated infections, as well as the process measures used to prevent such infections, should be based on objective definitions that can be consistently applied by all Massachusetts hospitals that are subject to the reporting requirements.
2. Outcome measures used for reporting (e.g. rates of specific HAIs) should be developed that can include an appropriate level of risk adjustment for patient-specific factors related to increased risk of infection.
3. The reporting system should collect and report healthcare data that are useful not only to the public, but also to the hospital for its infection control and prevention efforts.

4. Hospitals should use the reporting data to provide feedback to their healthcare providers about the facility's performance, to provide additional information to guide the hospital's ongoing efforts to prevent HAI, with the added opportunity to compare the facility's data with others in the health care system.
5. To avoid duplication of efforts, data collection requirements of the public reporting system (with regard to measures selected, definitions, populations surveyed and surveillance criteria), should, to the extent possible, be consistent with the recommendations and requirements of national organizations and agencies.
6. Reporting requirements should be phased in gradually to enable hospitals to modify their surveillance activities as needed, ensure reliability of data to be reported, and assess needs for additional resources.
7. Requirements for public reporting of HAIs should take into consideration the likely costs to hospitals, and the risk that public reporting may divert resources from infection prevention to data collection unless compensatory resources are made available.
8. Requirements for public reporting of HAIs should take into consideration the need for increased investment in appropriate information technology and information services support in hospitals to facilitate the data collection and analysis required.
9. The Department of Public Health should provide or facilitate initial and ongoing training for hospital staff in the data collection and data submission processes required by the public reporting system.
10. Data collection for public reporting of HAIs should be overseen by individuals with training in infection control and prevention, as defined by the Healthcare Infection Control Practices Advisory Committee (HICPAC).
11. Hospitals should facilitate collaboration and cooperation between their departments of infection control, quality improvement, employee health, and others involved in the prevention and control of HAIs, to ensure that the data required by the reporting system are collected efficiently and used effectively by the institution to improve quality of care.
12. The Department of Public Health should appoint a Technical Advisory Group, to meet regularly, composed of, but not limited to, the Department's director of infectious disease, a representative of the Betsy Lehman Center, infection control professionals, hospital administrators, hospital epidemiologists, quality improvement professionals, health care providers, consumers, and technical experts (e.g., microbiologist, statistician). The purpose of the Group would be to advise the Department on the ongoing implementation of the reporting system, and to assist the Department in the promulgation and review of regulations regarding the surveillance, reporting, and prevention of HAIs.

13. The effects of public reporting of HAIs should be periodically assessed. A plan for such assessment should be built into the public reporting system from the outset.
14. Use of administrative data (such as hospital discharge codes) alone for public reporting of HAIs leads to substantial misclassification and should not be adopted.

B. HAI Measures Selected for Reporting and Monitoring

The selection of measures for HAI reporting was guided by the recommendations of the Healthcare Infection Control Practices Advisory Committee (HICPAC) who emphasized the importance of considering frequency, severity and preventability of HAIs along with the ability to detect and report them accurately[1]. The types of infections that best fulfill these criteria are bloodstream infections (BSI) and surgical site infections (SSI). Ventilator-associated pneumonia (VAP) was also considered, but urinary tract infections (UTI) were not since HICPAC has determined there is "less prevention effectiveness relative to the burden of data collection and reporting" of UTIs[1].

Thus far, most public information on hospital performance used to monitor quality of care has been based solely on ***process measures*** (actions taken by healthcare providers that improve care and reduce risk of complications). However, there is also interest in monitoring the results of these processes through ***outcome measures*** such as rates of specific infections. The Task Groups and Expert Panel considered both types of measures in their deliberations.

The Expert Panel identified three potential levels of reporting for HAI-related process and outcome measures:

1. To the public for use by consumers, insurers and all stakeholders;
2. To the Betsy Lehman Center for monitoring and quality improvement purposes, but not for public dissemination;
3. Within the institution only, for tracking performance and results of quality improvement activities.

Some HAI measures raise serious concerns about difficulties with standardization across hospitals, which could lead to false reassurance, unfounded fears, and other unintended consequences. For this reason, the second level (Betsy Lehman Center without public distribution) was chosen as a reasonable compromise in selected instances, since it provides an opportunity to study the results with input from experts and appropriate stakeholders while still

[1]McKibben L, Horan T, et al. Guidance on public reporting of healthcare associated infections: Recommendations of the Healthcare Infection Control Practices Advisory Committee. AJIC. 2005; 33: 217-226.

providing a basis for oversight. In situations in which hospitals use different methods and definitions or evidence supporting the validity of the measure is lacking, internal tracking within the facility for self-assessment was determined to be the limit of utility.

Using this framework, the following chart summarizes the HAI-related measures that have been recommended for reporting and tracking. Thirteen measures (10 outcome and 3 process) have been given final approval:

HAI Measures Approved by Expert Panel			
Outcome Measures	**Reporting Level**		
	Public [1]	**BLC** [2]	**Internal** [3]
✓ CVC-BSI in ICUs – true pathogens (CDC criterion 1)*	♦		
✓ CVC-BSI in ICUs – skin contaminants (CDC criterion 2 and 3)*		♦	
✓ CVC-BSI outside of ICUs – true pathogens and skin contaminants (CDC criteria 1 and 2)*			♦
✓ SSI resulting from hip arthroplasty	♦		
✓ SSI resulting from knee arthroplasty	♦		
✓ SSI resulting from hysterectomy (vaginal and abdominal)		♦	
✓ SSI resulting from coronary artery bypass graft		♦	
✓ Ventilator-Associated Pneumonia (VAP)			♦
Point prevalence of methicillin-resistant *Staphylococcus aureus* (MRSA)		♦	
Clostridium difficile-associated disease (CDAD)			♦
Process Measures			
VAP prevention: Daily application of protocol-driven assessments for readiness to discontinue mechanical ventilation		♦	
VAP prevention: Elevation of the head of the patient's bed		♦	
✓ Influenza vaccination of healthcare workers (new to NHSN for 2008)		♦	

✓ = Measure found in National Healthcare Safety Network (NHSN)

[1] Public – Data submitted to the Department of Public Health
[2] BLC – Betsy Leman Center for Patient Safety and Medical Error Reduction
[3] Internal – For reporting hospital's own use only
CVC-BSI – central-venous catheter-associated bloodstream infection
ICU – intensive care unit
SSI – surgical site infection
* please see Attachment C in *Recommendations Related to Reporting of Healthcare-Associated Infection Measures*

Given the need for consistent measures, definitions and protocols, the Expert Panel has recommended that the Centers for Disease Control and Prevention's (CDC) National Healthcare Safety Network (NHSN) be adopted. Massachusetts hospitals should collect and transmit data to NHSN as the initial HAI reporting framework. To date, 12 other states have also opted to use NHSN for this purpose.